# Washington Aqueduct Future Treatment Alternatives Study

## ADDITIONAL TECHNICAL EXPERTS



## **Dr. Richard Bull MoBull Consulting and Washington State University**

Dr. Bull obtained his Ph.D. in Pharmacy from the University of Washington in 1964 and his Ph.D. in Pharmacology from the University of California San Francisco in 1971. He joined the U.S. EPA Laboratory in Cincinnati and left as the Director of the Toxicology and Microbiology Division in 1984. He was Professor of Pharmacology/Toxicology at the College of Pharmacy, Washington State University (1984-1994) and in Environmental Sciences (2000-2003). Between 1994 & 2000 he was a Senior Staff Scientist Pacific Northwest National Laboratory. His research has focused on the toxicology of drinking water contaminants, including heavy metals, disinfection by-products, and solvents. His most recent laboratory-based research work focused on mode of action of carcinogenic DBPs. Since retirement, he has worked as a private consultant on issues related to micro-constituents of water, including personal care product ingredients and drugs.



#### Ian Douglas City of Ottawa

Mr. Douglas has 23 years of experience in design, research, and plant operations—both in the environmental and industrial sector. After working 5 years in the petrochemical industry, he moved into the area of drinking water quality and treatment. He earned degrees in both Chemistry (1984) and Chemical Engineering (1987) from the University of Western Ontario. As Water Quality Engineer and Plant Manager for the City of Ottawa, he has worked on more than 50 research and optimization projects with partner organizations such as the Water Research Foundation, NSERC, Health Canada, CIDA and several Canadian universities. During 2007 lan spent a 1-year work term working on microbial risk assessment and treatment guidelines with Health Canada. He was recently appointed as an Adjunct Professor in the Department of Civil Engineering at the University of Toronto where he teaches and advises students in the areas of drinking water treatment, process optimization, and microbial risk assessment.



### **Dr. Robert Tardiff**The Sapphire Group™

Dr. Tardiff is the co-founder and President of The Sapphire Group™. He is an internationally recognized expert in toxicology and risk assessment with more than 25 years of experience directing and conducting risk assessments and developing risk assessment methodologies for a range of projects. He has been a principal of several major risk assessment firms.

Previously, he was Chief of the Toxicological Assessment Branch of the U.S. EPA and Executive Director of the National Academy of Sciences/National Research Council Board on Toxicology and Environmental Health Hazards. Dr. Tardiff is also active as an editor on a number of toxicology and environmental health journals. He has held or currently holds memberships in several national and international organizations and has been involved in several seminars and conferences. He has also published numerous books and publications on a wide range of health and toxicological topics.

Dr. Tardiff completed his undergraduate degree in Biology from Merrimack College and his doctorate in Pharmacology and Toxicology from the University of Chicago.